

COC#187

11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 East 11115 Montgomery, Suite B, Spokane, WA 99206-4776 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132

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(503) 906-9200 FAX 906-9210 (541) 383-9310 FAX 382-7588

20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 **CHAIN OF CUSTODY REPORT**Work Order #: (541) 383-9310

CLIENT: BRISTOL					INVOICE TO:								TURNAROUND REQUEST in Business Days*							
REPORT TO: ANNE K	RANALDETT	ER	_		BR	15	101											ganic Analyses		
ADDRESS: ANCH!	MKA, AK														10 7		4 Im Hydrod	2 carbon Analyses	s ·	< 1
		770.	00-	15	P.O. N	UMBEI	R: 2	109	0						5		L	2 1	_	
PHONE: 907-770. PROJECT NAME: AMC	HITKA								LYSES						ST			ease Specify		
PROJECT NUMBER: 2109				_	4											ОТН	ER			
SAMPLED BY:	12		اء دا	2	13										*Turnan	ound Requests	less than sta	andard may incur	Rush Charg	tes.
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Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244 fax 425.420.9210 425.420

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East 11 ontgomery, Suite B, Spokane, WA 39206-4776 fax 509.924.9290

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 541.383.9310 fax 541.382.7588

25 October, 2001

Anne Krarawetter Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

RE: Amchitka

Enclosed are amended results of analyses for samples received by the laboratory on 07/26/01 09:50. If you have any questions concerning this report, please feel free to contact me. These results supercede all previous results reported by the laboratory.

Sincerely,

Jerry Orlando

Project Manager/QA

fry Oloulo

Work Orders included in this report:

P1G0858



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

ANALYTICAL REPORT FOR SAMPLES - Amended

Sample ID				
	Laboratory ID	Matrix	Date Sampled	Date Received
01AMC406MI	P1G0858-01	Soil	07/21/01 10:15	
01АМС407МТ	D1 C0050 00		07/21/01 10:15	07/26/01 09:50
	P1G0858-02	Other wet	07/21/01 11:12	07/26/01 09:50

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jerry Orlando, Project Manager/QA

North Creek Analytical, Inc. **Environmental Laboratory Network**

Page 1 of 17



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Total Metals per EPA 6000/7000 Series Methods

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC406MI (P1G0858-01) Soil					Sampled: 07/2	1/01 Recei	ived: 07/26/		
Arsenic Barium Cadmium Chromium Lead Mercury Selenium	46.6 127 6.83 95.5 360 0.852 ND	0.500 1.00 0.500 0.500 2.14 0.100 0.500	mg/kg dry " " " "	1 10 " " 42.8 1	EPA 6020 " " EPA 7471A EPA 6020	07/28/01 " " " 08/02/01 07/28/01	08/01/01 07/31/01 " " 07/31/01 08/02/01 07/31/01	1071826 " " " " 1080927	
Silver	ND	0.500	Ħ	10	"	"	U//31/U1	1071826	

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC406MI (P1G0858-01) Soil					Sampled: 07/2	1/01 Recei	ived: 07/26/0	n1	7.500
Acetone	ND	3600	ug/kg dry	1	EPA 8260B	08/04/01			
Benzene	ND	144	" H	11	EFA 6200B	U8/U4/UI #	08/04/01	1081012	
Bromobenzene	ND	144	n	"			" N	"	
Bromochloromethane	ND	144	n	н	11		n	" "	
Bromodichloromethane	ND	144	11		11	"	. "	,,	
Bromoform	ND	144	"	,,		'n	"	"	
Bromomethane	ND	719	n	"	н	"	"	"	
2-Butanone	ND	1440	**	17	**	H	 H	" "	
n-Butylbenzene	ND	719	11	11	**	"	11	. "	
sec-Butylbenzene	ND	144	н	n	#	11			
tert-Butylbenzene	ND	144	11	n	**	н	**		
Carbon disulfide	ND	1440	n		н	**		" "	
Carbon tetrachloride	ND	144	н	н	Ħ	11	11	"	
Chlorobenzene	ND	144			,	н	"		
Chloroethane	ND	144	**	**	н			"	
Chloroform	ND	144	н	m	H		"		
Chloromethane	ND	719	11		#	11	tr	11	
2-Chlorotoluene	ND	144	11	,,	u		"	" #	
4-Chlorotoluene	ND	144	"	н	,		"	"	
1,2-Dibromo-3-chloropropane	ND	719	"	n	,		 H	"	
Dibromochloromethane	ND	144	"	Ħ			" n	" "	
1,2-Dibromoethane	ND	144	11	11	"		#	"	
Dibromomethane	ND	144	11	n			" n	"	
1,2-Dichlorobenzene	ND	144	R	11			" "		
1,3-Dichlorobenzene	ND	144	**	,,	"	"		11	
1,4-Dichlorobenzene	ND	144		"	,,	,	n n		
Dichlorodifluoromethane	ND ND	719		и	"	" "	*	"	
1,1-Dichloroethane	ND	144			"	" H	"	"	
1,2-Dichloroethane	ND	144	**				"		
1,1-Dichloroethene	ND	144	"	п			"	**	
cis-1,2-Dichloroethene	ND	144	er	"		" "	,,	n	
trans-1,2-Dichloroethene	ND	144		n	Ħ		11	"	
1,2-Dichloropropane	ND	144	n	н	it	,	11	"	
1,3-Dichloropropane	ND	144	"	и	H	"	" "	**	
2,2-Dichloropropane	ND	144	*1	Ħ			"	71	
1,1-Dichloropropene	ND	144	11	11	"	" H	. "	77	
cis-1,3-Dichloropropene	ND	144	11	**	**	"	" "	"	
trans-1,3-Dichloropropene	ND	144	tt	11		 H	"	"	
Ethylbenzene	253	144	n	,,		" n	" "	"	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes			
01AMC406MI (P1G0858-01) Soil		Sampled: 07/21/01 Received: 07/26/01										
Hexachlorobutadiene	ND	288	ug/kg dry	1	EPA 8260B	08/04/01			· · · · · · · · · · · · · · · · · · ·			
2-Hexanone	ND	1440	-g ng ui j	H.	EFA 6200B	U8/U4/U1	08/04/01	1081012				
Isopropylbenzene	ND	288	Ħ	**	#1	"	" "	"				
p-Isopropyltoluene	ND	288	11	**	Ħ		" "	11				
4-Methyl-2-pentanone	ND	719	u	11	"	 It	17					
Methyl tert-butyl ether	ND	144	n			 H	"					
Methylene chloride	ND	719	91	ıı	11	n		**				
Naphthalene	ND	288	н	**	n	" "		11				
n-Propylbenzene	ND	144	11	,,	" "	,	H	"				
Styrene	3150	144	н	,	"	,		H				
1,1,1,2-Tetrachloroethane	ND	144	tt		" H	,	H .	11				
1,1,2,2-Tetrachloroethane	ND	144	11		и	"	"	n .				
Tetrachloroethene	ND	144	,,		" H	11	"	н				
Гоluene	255	144	11	Ħ	"	" n	11					
1,2,3-Trichlorobenzene	ND	144	**	11	"	**	"	"				
1,2,4-Trichlorobenzene	ND	144		. 11	n	"	"	"				
1,1,1-Trichloroethane	ND	144	**	"	**	"	,,	tr				
1,1,2-Trichloroethane	ND	144	**	n	11	**	n					
Trichloroethene	ND	144	Ħ	11		n n	" "	"				
Trichlorofluoromethane	ND	144	**	H		 H	"	"				
1,2,3-Trichloropropane	ND	144	н	n	n.		"	"				
1,2,4-Trimethylbenzene	ND	144	**	и	n	н	 11	"				
1,3,5-Trimethylbenzene	ND	144	11	11	11	Ħ	**					
Vinyl chloride	ND	144	n	ħ	n	n	11	"				
)-Xylene	158	144			n							
n,p-Xylene	326	288	91	11	11	tt	11	"				
Surr: 4-BFB	76.1 %	70-130					 _		A-01			
Surr: 1,2-DCA-d4	103 %	70-130							A-01			
Surr: Dibromofluoromethane	99.8 %	70-130										
Surr: Toluene-d8	96.2 %	70-130										

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC407MI (P1G0858-02) Other wet					Sampled: 07/2	1/01 Rece	ived: 07/26/	01	· · · · · · · · · · · · · · · · · · ·
Acetone	ND	2500	ug/kg wet	1	EPA 8260B	08/04/01	08/04/01	1081012	· · · · · · · · · · · · · · · · · · ·
Benzene	ND	100	11	11	11 11 020013	11	U6/U4/U1	1081012	
Bromobenzene	ND	100	n	11	н	11	11		
Bromochloromethane	ND	100	tt.	н	n	,	"	"	
Bromodichloromethane	ND	100	**	It	R	11	"	,,	
Bromoform	ND	100	n	11	"	**	"		
Bromomethane	ND	500	Ħ	31	"	11	,,		
2-Butanone	ND	1000	11	n	**	19	и	n	
n-Butylbenzene	ND	500	**	11	Ħ	#	11	"	
sec-Butylbenzene	ND	100	**	"	н	н	11	"	
tert-Butylbenzene	ND	100	**	**	n	n	,,	 H	
Carbon disulfide	ND	1000	н	н	11	"	"	"	
Carbon tetrachloride	ND	100	If	,,	#1	"	"		
Chlorobenzene	ND	100	**	,,	,,	,,	"	**	
Chloroethane	ND	100	11		"	"		***	
Chloroform	ND	100	"			"	"	н	
Chloromethane	ND	500	11	н	,		11	"	
2-Chlorotoluene	ND	100	,,	n	,	"	"	π	
4-Chlorotoluene	ND	100	**	"	,,	H		н	
1,2-Dibromo-3-chloropropane	ND	500			,, H		**	n	
Dibromochloromethane	ND	100	11		"	"		11	
1,2-Dibromoethane	ND	100	11	 H	" "		11	"	
Dibromomethane	ND	100	n	,,		"	11	IF	
1,2-Dichlorobenzene	ND		"	" #	n	11	"	11	
1,3-Dichlorobenzene	ND ND	100	"	"		Ħ	**	Ħ	
1,4-Dichlorobenzene	ND ND	100	"	,,	"	н	11	n	
Dichlorodifluoromethane	ND ND	100	,	H		Ħ	11	п	
1,1-Dichloroethane	ND ND	500	"	n n	"	"	11	11	
1,2-Dichloroethane	ND ND	100 100	"	11	H H	11	11	11	
1,1-Dichloroethene	ND ND		н	" "	11 tr	#	Ħ	11	
cis-1,2-Dichloroethene	ND ND	100	11	11	**	n .	Ħ	n	
trans-1,2-Dichloroethene	ND ND	100	"	"	n H	#	11	11	
1,2-Dichloropropane	ND ND	100	" "	,,		" .	n	"	
1,3-Dichloropropane		100			**	"	11	11	
2,2-Dichloropropane	ND	100	1t H	"	**	H	II .	It	
1,1-Dichloropropene	ND	100		"	u	H	. "	H	
cis-1,3-Dichloropropene	ND	100	"	II.	"	n	II	Ħ	
trans-1,3-Dichloropropene	ND	100	"	"	#	n	п	п	
Ethylbenzene	ND	100	11	"	**	n	n	11	
	ND	100	11	19	H	н	Ħ	"	

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC407MI (P1G0858-02) Other wet					Sampled: 07/2	1/01 Recei	ved: 07/26/	01	
Hexachlorobutadiene	ND	200	ug/kg wet	1	EPA 8260B	08/04/01	08/04/01		
2-Hexanone	ND	1000	11	"	"	100/04/01	V6/V4/V1 #	1081012	
Isopropylbenzene	ND	200	H	**	н	н	11	"	
p-Isopropyltoluene	ND	200	11	11	n	IT	#	" P	
4-Methyl-2-pentanone	ND	500	#	n	н	n	11		
Methyl tert-butyl ether	ND	100	11	It	It.	,,	91		
Methylene chloride	683	500	11	11	"	,	"	47	
Naphthalene	ND	200	11	11	,,	"		"	
n-Propylbenzene	ND	100	11	н	н	,		"	
Styrene	ND	100	IT	n	n	,,	**	"	
1,1,1,2-Tetrachloroethane	ND	100	h	11	11	n	11	" "	
1,1,2,2-Tetrachloroethane	ND	100	Ħ	н	n	19	**		
Tetrachloroethene	ND	100	**	II	н	11	n	 H	
Toluene	ND	100	H	**		11	#		
1,2,3-Trichlorobenzene	ND	100	**	Ħ	**	11	11		
1,2,4-Trichlorobenzene	ND	100	**	n	11	n	11	n	
1,1,1-Trichloroethane	ND	100	11	11	11	Ħ	#1	,	
1,1,2-Trichloroethane	ND	100	**	11	n	11	n	"	
Trichloroethene	ND	100	"	"	п	11	11	 H	
Trichlorofluoromethane	ND	100	n	11	11	97	11	,	
1,2,3-Trichloropropane	ND	100	n	11	**	n	n	11	
1,2,4-Trimethylbenzene	ND	100	R	y 1	**	н	H	**	
1,3,5-Trimethylbenzene	ND	100	17	n	**	н	н	11	
Vinyl chloride	ND	100	11	ıs	11	u	11	11	
o-Xylene	ND	100	n	11	11	n	11	"	
m,p-Xylene	ND	200	. 11	n	**	n	**	n	
Surr: 4-BFB	112 %	70-130							A-01
Surr: 1,2-DCA-d4	96.5 %	70-130							A-01
Surr: Dibromofluoromethane	93.5 %	70-130							
Surr: Toluene-d8	96.0 %	70-130							

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Polynuclear Aromatic Compounds per EPA 8270M-SIM North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC406MI (P1G0858-01) Soil					01	R-05			
Acenaphthene	ND	335	ug/kg dry	25	Sampled: 07/2 EPA 8270m	07/31/01	ived: 07/26/0		K-03
Acenaphthylene	ND	335	"	11	# 02/UII	07/31/01	08/02/01	1071915	
Anthracene	ND	335	**		"	n	 H	,,	
Benzo (a) anthracene	ND	335	#	"	н	 H	" "	"	
Benzo (a) pyrene	381	335	tt	u	e		 H	"	
Benzo (b) fluoranthene	1110	335	11	н	п		"	11	
Benzo (ghi) perylene	481	335		n	n	n	 11	"	R-08
Benzo (k) fluoranthene	ND	335	**	u	n	H	"	"	
Chrysene .	790	335	Ħ	**	н		"	"	R-08
Dibenzo (a,h) anthracene	ND	335	11	**	**	Ħ		n n	
Fluoranthene	571	335	я	ır	**	n	"	" .	
Fluorene	ND	335	n	11	11	n	" # ·	"	
Indeno (1,2,3-cd) pyrene	ND	335	11	e	**		" H	"	
Naphthalene	ND	335	11		"	 N	"		
Phenanthrene	388	335	"	h	**		19	"	
Pyrene	720	335	ıı	Ħ	11	"	11	H H	
Surr: Fluorene-d10	87.6 %	40-150							
Surr: Pyrene-d10	79.8 %	40-150							J
Surr: Benzo (a) pyrene-d12	126 %	40-150							J

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Percent Dry Weight (Solids) per Standard Methods North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
01AMC406MI (P1G0858-01) Soil				S	Sampled: 07/2	1/01 Recei	ved: 07/26/0		
% Solids	64.8	1.00 %	by Weight		NCA SOP	07/27/01	07/30/01	1071779	

North Creek Analytical - Portland

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Total Metals per EPA 6000/7000 Series Methods - Quality Control

	No.	rth Creek	Analy			303119/	error helic is securificated.	eren Soverstand Salara		
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071826 - EPA 3050							· · · · · · · · · · · · · · · · · · ·			
Blank (1071826-BLK1)				Drangada	07/20/01		1 00/04/04			
Arsenic	ND	0.500	mg/kg	1 repared.	07/28/01	Analyze	i: 08/01/01			
Barium	ND	1.00	"Ing/kg							
Cadmium	ND	0.500	#							
Chromium	ND	0.500	,,							
Lead	ND	0.500	"							
Selenium	ND	0.500								
Silver	ND	0.500	н							
LCS (1071826-BS1)				Prepared:	07/28/ 01	Analysasi	l: 08/01/01			
Arsenic	10.2	0.500	mg/kg	10.0	07/28/01					
Barium	11.4	1.00	1116/14G	10.0		102	80-120			
Cadmium	11.2	0.500	H			114	80-120			
Chromium	11.4	0.500	It	10.0		112	80-120			
Lead	10.9	0.500	**	10.0		114	80-120			
Selenium	11.1	0.500	,,	10.0		109	80-120			
Silver	5.40	0.500	"	10.0 5.00		111 108	80-120 80-120			
Duplicate (1071826-DUP1)	Sou	rce: P1G086	6 9_ 01	Prepared:	07/29/01					
Arsenic	5.07		mg/kg dry	Trepared.	4.60	Allaryzed	: 08/01/01	0.70		
Barium	232	1.00	"		211			9.72	40	
Cadmium	ND	0.500	**		ND			9.48	40	
Chromium	30.4	0.500	**		27.1				40	
ead	18.2	0.500	"					11.5	40	
elenium	ND	0.500	19		16.3			11.0	40	
lilver	ND	0.500	19		ND ·				40	
Aatrix Spike (1071826-MS1)					ND			21.4	40	
Arsenic		rce: P1G086		Prepared:						
Barium	18.3		mg/kg dry 	12.9	4.60	106	75-125			
Cadmium	242	1.00		12.9	211	NR	75-125			Q-(
Chromium	15.2	0.500	"	12.9	ND	118	75-125			
ead	49.7	0.500	"	12.9	27.1	175	75-125			Q-(
elenium	34.3	0.500	11	12.9	16.3	140	75-125			Q-(
ilver	14.1	0.500	"	12.9	ND	109	75-125			
IIVGI	7.86	0.500	11	6.44	ND	121	75-125			

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Total Metals per EPA 6000/7000 Series Methods - Quality Control

	Noi	th Creek	Analy	tical - Po	ortland					Mark British
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1080927 - EPA 7471										
Blank (1080927-BLK1) Mercury	ND	0.100	mg/kg	Prepared	& Analyze	d: 08/02/0	01			
LCS (1080927-BS1)				Prepared of	& Analyze	:d: 08/02/0	01			
Mercury	1.05	0.100	mg/kg	1.00		105	80-120			
Duplicate (1080927-DUP1)	Sou	irce: P1G10	15-01	Prepared a	& Analyze	d: 08/02/0	01			
Mercury	ND	0.100	mg/kg dry		ND				40	
Matrix Spike (1080927-MS1)	Sou	ırce: P1G101	15-01	Prepared &	& Analyze	d: 08/02/0)1			
Mercury	1 20	0.100	ma/ka da		ND					

1.22

ND

98.4

75-125

0.100 mg/kg dry

1.20

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North (Creek	Analytical	- Portland

1											
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	

Batch	1081012	- EPA	5035

Blank (1081012-BLK1)				Prepared & Analyzed: 08/04/01
Acetone	ND	25.0	ug/kg	1 repaired & Adiatyzed. 06/04/01
Benzene	ND	1.00	"	
Bromobenzene	ND	1.00	11	
Bromochloromethane	ND	1.00	**	
Bromodichloromethane	ND	1.00	n	
Bromoform	ND	1.00	Ħ	
Bromomethane	ND	5.00	11	
2-Butanone	ND	10.0		•
n-Butylbenzene	ND	5.00	"	
sec-Butylbenzene	ND	1.00	**	
tert-Butylbenzene	ND	1.00	11	
Carbon disulfide	ND	10.0	**	·
Carbon tetrachloride	ND	1.00	h	
Chlorobenzene	ND	1.00	n	
Chloroethane	ND	1.00	**	
Chloroform	ND	1.00	**	
Chloromethane	ND	5.00	11	
2-Chlorotoluene	ND	1.00	н	
4-Chlorotoluene	ND	1.00	**	
1,2-Dibromo-3-chloropropane	ND	5.00	IT.	
Dibromochloromethane	ND	1.00	**	
1,2-Dibromoethane	ND	1.00	n	
Dibromomethane	ND	1.00	n	
1,2-Dichlorobenzene	ND	1.00	**	
1,3-Dichlorobenzene	ND	1.00	n	
1,4-Dichlorobenzene	ND	1.00	н	
Dichlorodifluoromethane	ND	5.00	н	
1,1-Dichloroethane	ND	1.00	l†	
1,2-Dichloroethane	ND	1.00	11	
1,1-Dichloroethene	ND	1.00	**	
cis-1,2-Dichloroethene	ND	1.00	"	
trans-1,2-Dichloroethene	ND	1.00	n	
1,2-Dichloropropane	ND	1.00	#1	
1,3-Dichloropropane	ND	1.00	"	
2,2-Dichloropropane	ND	1.00	n	
1,1-Dichloropropene	ND	1.00	11	

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Project: Amchitka

Project Number: 21090, PO# 21090

Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

					OT OTHERT CE						
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	

Batch 1081012 - EPA 5035

Blank (1081012-BLK1)				Prepared & Ar	alvzed. 00/04	/01	
cis-1,3-Dichloropropene	ND	1.00	ug/kg	1 Topared & Al	iaiyzeu. 08/04/	/01	
trans-1,3-Dichloropropene	ND	1.00	"				
Ethylbenzene	ND	1.00	*1				
Hexachlorobutadiene	ND	2.00	11				
2-Hexanone	ND	10.0	n				
Isopropylbenzene	ND	2.00	Ir				
p-Isopropyltoluene	ND	2.00	u				
4-Methyl-2-pentanone	ND	5.00	**				
Methyl tert-butyl ether	ND	1.00	**				
Methylene chloride	ND	5.00	11				
Naphthalene	ND	2.00	н				
n-Propylbenzene	ND	1.00	**				
Styrene	ND	1.00	•				
1,1,1,2-Tetrachloroethane	ND	1.00	*				
1,1,2,2-Tetrachloroethane	ND	1.00	н				
Tetrachloroethene	ND	1.00	**				
Toluene	ND	1.00	н				
1,2,3-Trichlorobenzene	ND	1.00	Ħ				
1,2,4-Trichlorobenzene	ND	1.00					
1,1,1-Trichloroethane	ND	1.00	*1				
1,1,2-Trichloroethane	ND	1.00	п				
Trichloroethene	ND	1.00	**				
Trichlorofluoromethane	ND	1.00	n				
1,2,3-Trichloropropane	ND	1.00	11				
1,2,4-Trimethylbenzene	ND	1.00	**				
1,3,5-Trimethylbenzene	ND	1.00	**				
Vinyl chloride	ND	1.00	"				
o-Xylene	ND	1.00	n				
m,p-Xylene	ND	2.00	11				
Surr: 4-BFB	21.6		"	20.0	108	70-130	
Surr: 1,2-DCA-d4	19.5		"	20.0	97.5	70-130 70-130	
Surr: Dibromofluoromethane	19.2		"	20.0	96.0	70-130	
Surr: Toluene-d8	19.1		"	20.0	95.5	70-130	

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North Creek Analytical, Inc. Environmental Laboratory Network Page 12 of 17



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Volatile Organic Compounds per EPA Method 8260B - Quality Control

	No	rth Creek	Analy	tical - P	ortland		y Conti			
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1081012 - EPA 5035									Dimit	Notes
LCS (1081012-BS1)			,	Prepared	Pr Amalau	J. 00/04/	^+			
Benzene	20.5	1.00	ug/kg	20.0	& Analyze					
Chlorobenzene	20.6	1.00	ug/Kg	20.0		102	80-135			
1,1-Dichloroethene	19.3	1.00	**	20.0		103	80-135			
Toluene	20,9	1.00	н	20.0		96.5	60-150			
Trichloroethene	20.3	1.00	11	20.0		104	80-130			
Surr: 4-BFB	21.2					102	70-135			-
Surr: 1,2-DCA-d4	19.6		,,	20.0		106	70-130			
Surr: Dibromofluoromethane	19.8		,,	20.0		98.0	70-130			
Surr: Toluene-d8	19.7		"	20.0		99.0	70-130			
	17.7			20.0		98.5	70-130			
Matrix Spike (1081012-MS1)	Sou	urce: P1G08	58-01	Prepared	& Analyze	d· 08/04/0)1			
Benzene	4500	144	ug/kg dry	4440	ND	100	60-135			
Chlorobenzene	4640	144	"	4440	ND	105	65-125			
1,1-Dichloroethene	4380	144	11	4440	ND	98.6	60-135			
Toluene	4720	144	**	4440	255	101	60-135			
Trichloroethene	4820	144	Ħ	4440	ND	109	60-125			
Surr: 4-BFB	32.0			44.4		72.1			··· · · · · · · · · · · · · · · · · ·	
Surr: 1,2-DCA-d4	44.3		"	44.4		72.1 99.8	70-130 70-130			A-0.
Surr: Dibromofluoromethane	44.1		,,	44.4		99.8 99.3	70-130 70-130			
Surr: Toluene-d8	43.3		"	44.4		99.5 97.5	70-130 70-130			
Matrix Spike Dup (1081012-MSD1)										
Benzene		rce: P1G08			& Analyze)1			
Chlorobenzene	4420	144	ug/kg dry	4440	ND	98.6	60-135	1.79	25	
1,1-Dichloroethene	4530	144		4440	ND	102	65-125	2.40	25	
Foluene	4360	144	"	4440	ND	98.2	60-135	0.458	25	
Γrichloroethene	4730	144	"	4440	255	101	60-125	0.212	25	
	4830	144	"	4440	ND	109	60-125	0.207	25	
Surr: 4-BFB	31.4		"	44.4		70.7	70-130			A-0
Surr: 1,2-DCA-d4	42.8		"	44.4		96.4	70-130			
Surr: Dibromofluoromethane	43.0		"	44.4		96.8	70-130			
Surr: Toluene-d8	43.3		"	44.4		97.5	70-130			

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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

<u>North C</u>	reek	Anal	vtical	- Port	and
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	0/050	%REC		RPD	
			Onits	Level	Result	%REC	Limits	RPD	Limit	Notes
D 4 1 40=404=										

Batch	107	1915 -	EPA	3550

Blank (1071915-BLK1)				Drangered: 07/21/01	A 1	1.00/00/01	
Acenaphthene	ND	13.4	ug/kg	Prepared: 07/31/01	Analyze	d: 08/02/01	
Acenaphthylene	ND	13.4	" "				
Anthracene	ND	13.4	"				
Benzo (a) anthracene	ND	13.4	u				
Benzo (a) pyrene	ND	13.4	n				
Benzo (b) fluoranthene	ND	13.4	. 11				
Benzo (ghi) perylene	ND	13.4	н				
Benzo (k) fluoranthene	ND	13.4	**				
Chrysene	ND	13.4					
Dibenzo (a,h) anthracene	ND	13.4	11				
Fluoranthene	ND	13.4					
Fluorene	ND	13.4	,,				
Indeno (1,2,3-cd) pyrene	ND	13.4	n				
Naphthalene	ND	13.4	tt.				
Phenanthrene	ND	13.4	**				
Pyrene	ND	13.4	11				
Surr: Fluorene-d10	47.3		,,	83.3	56.8	40-150	
Surr: Pyrene-d10	72.9		"	83.3	30.6 87.5	40-150 40-150	
Surr: Benzo (a) pyrene-d12	69.8		"	83.3	83.8	40-150 40-150	
LCS (1071915-BS1)				Prepared: 07/31/01			
Acenaphthene	131	13.4	ug/kg	167	78.4	33-139	
Benzo (a) pyrene	150	13.4	"	167	76. 4 89.8	45-149	
Pyrene	121	13.4	"	167	72.5	39-138	
Surr: Fluorene-d10	53.4		"	83.3	64.1	40-150	
Surr: Pyrene-d10	72.3		"	83.3	86.8	40-150	
Surr: Benzo (a) pyrene-d12	71.3		"	83.3	85.6	40-150 40-150	

North Creek Analytical - Portland



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Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Polynuclear Aromatic Compounds per EPA 8270M-SIM - Quality Control

<u>North</u>	<u>Creek</u>	Analyt	ical -	Portland
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071915 - EPA 3550				•						
Matrix Spike (1071915-MS1)	So	urce: P1G07	783-06	Prepared:	07/31/01	Analyzad	: 08/02/01	 :-		
Acenaphthene	146	13.4		182	ND					
Benzo (a) pyrene	168	13.4	" "	182		80.2	33-139			
Pyrene	137	13.4	11		ND	92.3	45-149			
Surr: Fluorene-d10		13.4		182	ND	75.3	39-138			
Surr: Pyrene-d10	57.4		"	91.2		62.9	40-150			
•	81.7		"	91.2		89.6	40-150			
Surr: Benzo (a) pyrene-d12	78.5		"	91.2		86.1	40-150			
Matrix Spike Dup (1071915-MSD1)	Sou	ırce: P1G07	'83-06	Prepared:	07/31/01	Analyzed	: 08/02/01	•		
Acenaphthene	149	13.4	ug/kg dry	182	ND	81.9	33-139	2.03	60	
Benzo (a) pyrene	169	13.4	11	182	ND	92.9	45-149	0.593		
Pyrene	135	13.4	n	182	ND	74.2	39-138		60	
Surr: Fluorene-d10	57.5		"		140			1.47	60	
Surr: Pyrene-d10				91.2		63.0	40-150			
Surr: Benzo (a) pyrene-d12	79.2		"	91.2		86.8	40-150			
ourr. Denzo (u) pyrene-a12	78.4		n	91.2		86.0	40-150			

North Creek Analytical - Portland



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Bristol Environmental & Engineering 2000 W. International Airport Rd. #C-1 Anchorage, AK 99502-1116

Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report Issued: 10/25/01 16:26

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland										
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1071779 - Dry Weight					-					
Duplicate (1071779-DUP1) % Solids	Source: P1G0644-01			Prepared:	07/27/01	Analyzed	: 07/30/01			
	90.3	90.3 1.00 % by Weigh			nt 90.1			0.222	20	
Duplicate (1071779-DUP2)	Source: P1G0893-01			Prepared: 07/27/01		Analyzed: 07/30/01				
% Solids	79.7	1.00%	by Weig						20	
Duplicate (1071779-DUP3)	Source: P1G0916-11 Prepared: 07/27/01 Analyzed: 07/30/01									
% Solids	89.1	1.00%	by Weigl		88.7			0.450	20	

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Project: Amchitka

Project Number: 21090, PO# 21090 Project Manager: Anne Krarawetter

Amended Report

Issued: 10/25/01 16:26

Notes and Definitions

The dilution field was adjusted to compensate for surrogate (4-BFB) added in the field. A-01

Estimated value.

The spike recovery for this QC sample is outside of established control limits due to sample matrix interference. Q-02

R-05 Reporting limits raised due to dilution necessary for analysis. Sample contains high levels of reported analyte, non-target analyte,

and/or matrix interference.

Due to matrix unable to resolve Benzofluoranthene isomers. Value reported only in Benzo(b) category represents Total R-08

Benzo(b+k)fluoranthene.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%. dry

Sample results reported on a wet weight basis (as received) wet

RPD Relative Percent Difference

North Creek Analytical - Portland

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jerry Orlando, Project Manager/QA

North Creek Analytical, Inc. **Environmental Laboratory Network**

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